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EXAMINER

ELALLAM, AHMED

ART UNIT	PAPER NUMBER
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2616

DATE MAILED: 06/12/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/658,778

Applicant(s)

SEMAAN, GHASSAN

Examiner

AHMED ELALLAM

Art Unit

2616

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 March 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This communication is responsive to Amendment filed on 03/13/2006. The Amendment has been entered

Claims 1-21 are pending.

Specification

1. The disclosure is objected to because of the following informalities:

On page 11, second paragraph, the numeral character "20" was inadvertently added by a previous amendment. The numeral character "20" should be deleted.

On page 14, the Amendment filed on 7/24/2003 had changed the phrase "frame 400" into "layer 400". However the drawing shows a SONET frame 400 and not a SONET layer 400. Examiner believes that the original designation "400" to a SONET frame is more appropriate.

Also by the same Amendment, page 14 was deleted in its entirety. Such deletion resulted in the last paragraph on page 13 being incomplete.

The specification has been amended several times; Examiner believes that a **substitute specification** is necessary since it will be less burdensome for review.

Appropriate correction is required.

Claim Objections

2. Claims 1 and 8 are objected to because of the following informalities:

Regarding claim 1, the added limitation of “the payload portion of the at least one of the SONET data frames comprising the SONET layer” is a redundant limitation. Because the same limitation has been already recited in the claim. In addition, the last limitation of “each SONET data frame includes a plurality of logical channels” is a redundant limitation, because it is already stated that the payload portion of at least one of the SONET data frames is divided into two or more logical channels. Appropriate correction is required.

Claim 8 suffers from the same deficiencies as indicated in claim. Thus it is subject to the same objections.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

3. Claims 1-14, and 18-21 are rejected under 35 U.S.C. 102(e) as being anticipated by Chen et al, US (6,501,758).

Regarding claim 1, Chen discloses a fiber ring (SONET ring) system in which a STS level signals, or combinations of STS level signals are used, the system facilitates effective and efficient communication of ATM and TDM traffic over the common fiber ring. The system, through a variety of configurations and modes of operation, provides flexibility in the distribution of bandwidth between ATM and TDM traffic. Column 4, lines 43-62, Column 6, lines 66-67 and column 7, lines 1-14. (Corresponding to claimed subdividing a portion of data frames comprising a SONET layer into two or more logical channels, each logical channel having associated therewith a predetermined bandwidth capacity). Chen further discloses that virtual path automatic protection switching (VP APS) is used for STS/ATM traffic, and uni-directional path-switched ring protection is offered to STS/TDM traffic. And adjustment of the bandwidth allotted to either traffic type is accomplished provisioning the STS paths accordingly. See column 8, lines 24-39. (Corresponding to assigning a predetermined protection mechanism to each logical channel). Chen further discloses an automatic protection switching selector within a node in the fiber ring that chooses incoming signals from either working or protection channels depending on the configuration of the circuit and whether a fault has been detected. In a particular mode of operation, where ring 12 is configured as a bi-directional line-switched ring, automatic protection switching selector identify predetermined ATM -carrying channels and disables line switching protection for these

pre-designated ATM -carrying channels. Column 12, lines 8-21. (Corresponding to monitoring the SONET ring transmission to determine protection mechanisms associated with each logical channel).

Chen discloses having ATM and TDM traffic mapped to an OC-12 frame, the OC-12 frame having 12 STS-1 payloads. See column 4, lines 40-43), (an OC-12 frame has 12 STS-1 signals, see column 3, lines 14-16). (Claimed each SONET data frame includes a plurality of logical channels). Chen further discloses having flexibility in allocation of bandwidth between TDM and ATM traffic and adjustment of the bandwidth allotted to either traffic type is accomplished by merely provisioning the STS paths accordingly, see column 8, lines 44-48. (Claimed the predetermined protection mechanism is balanced against bandwidth utilization requirements of grouped data frames that are grouped upon protection desired).

Regarding claim 2, Chen discloses STS level signals, or combinations of STS level signals are used, See column 4, lines 43-62, column 6, lines 66-67 and column 7, lines 1-14. (Corresponding to SONET data frames comprise a plurality of STS level one frame).

Grouping of STS-1 frames is part of the SONET standard. Thus Chen inherently has possession of the claimed grouping of STS-1 frames according to the desired protection and bandwidth desired, since Chen teaches flexibility in allocation of bandwidth between TDM and ATM traffic and adjustment of the bandwidth allotted to either traffic type by provisioning the STS paths, see column 8, lines 44-48. (The TDM

and ATM have their respective protection assigned by standard protection of TDM and ATM).

Regarding claim 3, Chen discloses that virtual path automatic protection switching (VP APS) is used for STS/ATM traffic, and uni-directional path-switched ring protection is offered to STS/TDM traffic. See column 8, lines 24-39. (Corresponding to the protection mechanism comprise one of a layer1 SONET protection mechanism and a layer 2 protection mechanism).

Regarding claim 4, with reference to Figure 1, Chen discloses that System 10 facilitates effective and efficient communication of ATM and TDM traffic over a common fiber ring. Through a variety of configurations and modes of operation, system 10 provides flexibility in the distribution of bandwidth between ATM and TDM traffic. For example, if one type of traffic dominates the ring, system 10 can be configured to focus the majority of its resources on communicating that type of traffic. In addition, by providing ATM layer processing functionality at least some of nodes 14 on fiber ring 12, system 10 facilitates a high granularity in switching ATM information carried in STM signals. Column 2, lines 37-58. (Corresponding to limitation of claim 4).

Regarding claims 5 and 6, Chen discloses that Fiber ring 12 may comprise, for example, a two-fiber ring configured in a uni-directional path-switched ring (UPSR) mode, or a bi-directional path-switched ring (BLSR) mode.

Regarding claim 7, with reference to Figure 1, Chen discloses that System 10 facilitates effective and efficient communication of ATM and TDM traffic over a common fiber ring. Through a variety of configurations and modes of operation,

system 10 provides flexibility in the distribution of bandwidth between ATM and TDM traffic. For example, if one type of traffic dominates the ring, system 10 can be configured to focus the majority of its resources on communicating that type of traffic. In addition, by providing ATM layer processing functionality at least some of nodes 14 on fiber ring 12, system 10 facilitates a high granularity in switching ATM information carried in STM signals. Column 2, lines 37-58. (Corresponding to Layer2 protection mechanism comprises at least one of: an Ethernet protection mechanism, an Asynchronous transport mode protection mechanism, and a time division multiplexing protection mechanism).

Regarding claims 8-14, claims 8-14 are apparatus claims and have substantially the same scope of respective method claims 1-7, thus they are subject to the same rejection.

Regarding claims 19 and 21, Chen discloses transmitting hybrid traffic ATM/TDM over a common fiber ring. See abstract, column 1, and lines 32-62. (Claimed one or more logical channels of the SONET layer are transmitted over a common fiber channel).

Regarding claim 18, and 20, Chen discloses switched STS-1 signals carrying TDM information and ATM cells can be formatted into one or more OC-12 signals for transmission over ring 12. see column 4, lines 39-42. (Claimed storing data from two or more logical channels within a single one of the SONET data frames, as in claim 18, and 20).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chen in view of Bisson et al, US (6,349,092).

Regarding claim 15, Chen discloses that VT (Virtual tributary) traffic is carried within the transport Signals (data frame). see column 3, lines 1-24, but it does not explicitly disclose that the VT is VT-1.5.

However, Bisson discloses that SONET defines synchronous signals known as virtual tributaries (VTs) to transport lower speed signals and that VTs operate at four levels below STS-1. The four defined sizes of VTs are VT-1.5 (1.728 Mbps) for DS1 signals, VT-2 (2.304 Mbps) for CEPT-1 signals, VT-3 (3.456 Mbps) for DS1C signals, and VT-6 (6.912 Mbps) for DS2 signals. Within an STS-1 frame, each VT occupies a portion of the frame. Within the STS-1, different VT groups can be mixed together to form one STS-1 payload. See column 5, lines 3-11.

Therefore, it would have been obvious to an ordinary person of skill in the art, at the time the invention was made to have the VT frames of Chen comprise VT 1.5 level frames so that lower speed signal can be provided.

5. Claim 16 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chen.

Regarding claims 16 and 17, Chen discloses STS level signals, or combinations of STS level signals are used, See column 4, lines 43-62, column 6, lines 66-67 and column 7, lines 1-14.

Chen does not explicitly disclose that the STS-1 frame are non-contiguous. However, it would have been obvious to an ordinary person of skill in the art, at the time the invention was made to have the STS-1 frames of Chen being non-contiguous or contiguous as required by the type of data, such as time-sensitive (i.e. TDM data) or non time-sensitive data (i.e. ATM data).

Response to Arguments

6. Applicant's arguments filed 3/13/2006 have been fully considered but they are not persuasive.

On page 7 and 8 of the remarks, Applicant argues that:

“Chen et al. do not disclose ***subdividing a payload portion of at least one of the SONET frames comprising a SONET layer into one or more logical channels***, each logical channel having associated therewith a predetermined bandwidth capacity, nor do they disclose assigning a predetermined bandwidth capacity, nor do they disclose ***assigning a predetermined protection mechanism to each logical channel of the payload portion of the at least one of the SONET data frames comprising the SONET layer***, wherein the predetermined protection mechanism is balanced against

bandwidth utilization requirements of grouped data frames that are grouped depending upon protection desired”.

Examiner respectfully disagrees, Applicant chooses to be his own lexicographer in designating grouped STS frame within a SONET frame to be called “logical channels”. Chen doesn’t explicitly refer to grouped STS frames within a SONET frame as such. However, Chen’s teaching clearly anticipates Applicant’s amended claims as indicated below:

As to the claimed “**subdividing a payload portion of at least one of the SONET frames comprising a SONET layer into one or more logical channels**”. Chen discloses having ATM and TDM traffic mapped to an OC-12 frame, the OC-12 frame having 12 STS-1 payloads. See column 4, lines 40-43, (a SONET OC-12 frame has 12 STS-1 signals, (see column 3, lines 14-16), wherein the system of Chen, through a variety of configurations and modes of operation, provides flexibility in the distribution of bandwidth between ATM and TDM traffic within the same SONET frame. Column 4, lines 43-62, Column 6, lines 66-67 and column 7, lines 1-14. Therefore, having both ATM and TDM traffic carried in STS payloads of the same OC-12 SONET frame along the distribution of bandwidth between ATM and TDM traffic, reads on the claimed **subdividing a payload portion of at least one of the SONET frames comprising a SONET layer into one or more logical channels**, because, since the payload of the SONET frame is carrying both types of traffic, it must be preceded by a subdivision step so that each type of traffic would occupy a respective portion of the

subdivided payloads. (Note that a SONET frame comprises a SONET layer by standard).

As to the claimed **“assigning a predetermined protection mechanism to each logical channel of the payload portion of the at least one of the SONET data frames comprising the SONET layer”**. Chen discloses that virtual path automatic protection switching (VP APS) is used for STS/ATM traffic, and uni-directional path-switched ring protection is offered to STS/TDM traffic. Since each type of traffic occupy a number of STS-1 frames within the OC-12 SONET frame, and each type of traffic has its own protection mechanism assigned, reads on the claimed assignment of predetermined protection mechanism to each logical channel of the payload portion.

Further Applicant argues that “Chen et al., at the passages cited by Examiner (column 8, lines 24-39, for example), disclose that STM signals carrying TDM information or ATM cells can be sent over different STS paths, with the amount of bandwidth devoted to each being selected on an as-needed basis. Various protection mechanisms are applied to each path by the nature of this scheme, whether they are SONET, layer 2, etc. This is patentably distinct from the concept of dividing a SONET data frame into logical channels, each logical channel having a given bandwidth and a given protection mechanism, with the considerations associated with each factor working together to shape the nature of the logical channel. Where Chen et al. discuss a common path, there is no hint or suggestion of split or tailored protection mechanisms”. Emphasis added. Examiner respectfully disagrees. As indicated above Examiner explained the concept of dividing a SONET data frame into logical channels,

each logical channel having a given bandwidth and a given protection mechanism. The passage noted by Applicant is related to a detailed example of Chen system at the path layer and how specific paths within the SONET ring are used, Applicant lacks details with regard to STS paths within the SONET ring, and thus the lack of such details do not represent a logical comparison with that of Chen. Nevertheless, the concept of dividing a SONET data frame into logical channels, each logical channel having a given bandwidth and a given protection mechanism is clearly anticipated by Chen, see above argument.

As to claims 15-17, Applicant argues that claims 15-17 depended from allowable respective base claims 1 and 8, therefore they are patentable. Examiner disagrees for the reason stated above in the rejection of claims 1 and 8.

Finally, Examiner notes that Applicant didn't address Examiner's request noted in the last office action. Again Examiner respectfully requests that **a clarification about certain limitations that are believed to be ambiguous, such as the assignment of the protection mechanism to logical channels within the context of the SONET ring, and why monitoring the SONET ring to determine protection mechanisms associated with logical channels if the protection is already assigned.** For example it is not clear why monitoring to determine protection mechanisms associated with logical channels, while the protection mechanism are already determined for the logical channels. Such a lack of clarification by Applicant in the next communication may be ground for incomplete illustration of the invention.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: See Form PTO-892.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

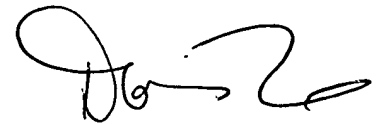
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to AHMED ELALLAM whose telephone number is (571) 272-3097. The examiner can normally be reached on 9-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, To Doris can be reached on (571) 272-7629. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

AHMED ELALLAM
Examiner
Art Unit 2616
6/7/06

A handwritten signature in black ink, appearing to read 'Doris H. To', with a stylized, flowing script.

DORIS H. TO
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600